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IS 9354 (1980): Alachlor emulsifiable concentrates [FAD 1: Pesticides and Pesticides Residue Analysis]



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IS : 9354 - 1980

(Reaffirmed - 2012)

Indian Standard

**SPECIFICATION FOR
ALACHLOR EMULSIFIABLE CONCENTRATES**

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SPECIFICATION FOR ALACHLOR EMULSIFIABLE CONCENTRATES

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AMENDMENT NO. 1 SEPTEMBER 1988
TO
IS : 9354 - 1980 SPECIFICATION FOR ALACHLOR
EMULSIFIABLE CONCENTRATES

(*Page 4, clause 2.2.5*) — Add the following note at the end of the clause:

‘NOTE — The material need not be subjected to heat treatment if it has crossed half of its shelf life as ascertained from the date of manufacture and date of expiry declared on the container.’

(AFCDC 6)

Printed at Swatantra Bharat Press, Delhi, India

**AMENDMENT NO. 2 MAY 1994
TO
IS 9354 : 1980 SPECIFICATION FOR ALACHLOR EC**

(Page 4, clause 2.2.5) — Delete.

(Page 6, clause 4.1) — Substitute the following for the existing:

'When freshly manufactured material in bulk quantity is offered for inspection, representative samples of the material shall be drawn and tested as prescribed in IS 10627 : 1983 within 90 days of its manufacture. When the material is offered for inspection after 90 days of its manufacture, sampling shall be done as prescribed in IS 10627 : 1983. However, the criteria for conformity of the material when tested, shall be the limits of tolerances, as applicable over the declared nominal value and given under clause 2.3.1 of the standard.'

(FAD 1)

Reprography Unit, BIS, New Delhi, India

Indian Standard
SPECIFICATION FOR
ALACHLOR EMULSIFIABLE CONCENTRATES

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 24 April 1980, after the draft finalized by the Pest Control Sectional Committee had been approved by the Agricultural and Food Products Division Council and the Chemical Division Council.

0.2 Alachlor emulsifiable concentrates are used as agricultural herbicide.

0.3 Alachlor emulsifiable concentrate is generally manufactured to contain 50 percent (*m/m*) of alachlor.

0.4 In the preparation of this standard, due consideration has been given to the provisions of the Insecticides Act, 1968, and the Rules framed thereunder. However, this standard is subject to the restrictions imposed under these, wherever applicable.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the requirements and the methods of sampling and test for alachlor emulsifiable concentrates.

2. REQUIREMENTS

2.1 Constituents -- The material shall consist of alachlor, technical, dissolved in suitable solvent(s), together with emulsifying agent(s), and with or without stabilizer(s) and/or coupler(s).

*Rules for rounding off numerical values (*revised*).

IS : 9354 - 1980

2.1.1 Alachlor, technical, employed in the manufacture of emulsifiable concentrates shall conform to IS : 9353-1980*.

2.2 Physical — The material shall comply with the physical requirements specified in 2.2.1 to 2.2.5.

2.2.1 Description — The material shall be a stable liquid and shall be free from sediment. Suspended matter shall be negligible. It shall readily form a emulsion on dilution with water suitable for spray.

2.2.2 Cold Test — No turbidity or separation of solid and/or oily matter shall occur when the material is subjected to the cold test at 10°C as prescribed in 13.1 of IS : 6940-1973†, or at any other lower temperature as agreed to between the purchaser and the supplier. Introduction of seeding crystal is not necessary for the test.

2.2.3 Flash Point (Abel) — When determined by the method prescribed in IS : 1448 [P : 20]-1960‡, the flash point of the material shall be above 24.5°C.

2.2.4 Emulsion Stability — Any separation, including creaming at the top and sedimentation at the bottom, of 100 ml of emulsion prepared in standard hard water with 5 ml of the concentrate for public health use and with 2 ml of concentrate for agricultural use, shall not exceed 2 ml when tested by one of the methods prescribed in 13.3 of IS : 6940-1973†.

2.2.5 Heat Stability — After treating in accordance with the method prescribed in 13.4 of IS : 6940-1973† the material shall comply with the requirements specified in 2.2.1 to 2.2.4 and 2.3.1.

2.3 Chemical — The material shall comply with the chemical requirements specified in 2.3.1 and 2.3.2.

2.3.1 Alachlor Content — When determined by the method prescribed in Appendix A of IS : 9353-1980*, the observed alachlor content, percent (m/m), of any of the samples shall not differ from the declared nominal value by more than the percent tolerance limits indicated below:

*Specification for alachlor, technical.

†Methods of tests for pesticides and their formulations.

‡Methods of tests for petroleum and its products, P:20 Flash point by Abel apparatus.

<i>Nominal Value, Percent</i>	<i>Tolerance</i>	
Up to 9	+ 10 - 5	} percent of the nominal value
Above 9 and below 50	+ 5 -	
50 and above	+ 5 - 3	

2.3.1.1 The actual value of alachlor content in the formulation shall be calculated to the second decimal place for rounding off to the first decimal place before applying the tolerances given in 2.3.1.

2.3.2 Acidity — When tested by the method prescribed in 11.3 of IS : 6940-1973*, acidity (as H_2SO_4) shall be not more than 0.1 percent by mass.

3. PACKING AND MARKING

3.1 Packing — The material shall be packed in clean and dry containers made of mild steel or tinplate. They shall be suitably and properly lacquered from inside. The containers shall also conform to the general requirements stipulated in 2 of IS : 8190 (Part II)-1976†.

3.2 Marking — The containers shall bear legibly and indelibly the following information and any other information as is necessary under the Insecticides Act and Rules:

- a) Name of the material and its end use;
- b) Name of the manufacturer;
- c) Batch number;
- d) Date of manufacture; —
- e) Net volume of contents;
- f) Nominal alachlor content, percent (*m/m*); and
- g) The cautionary notice worded as in the Insecticides Act and Rules.

*Methods of tests for pesticides and their formulations.

†Requirements for packaging of pesticides: Part II Liquid pesticides.

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3.2.1 Each container may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

4. SAMPLING

4.1 Representative samples of the material shall be drawn as prescribed in 'Indian Standard methods for sampling of pesticides and their Formulations' (*under preparation*).

NOTE — Till such time the standard under preparation is published, the matter shall be as agreed to between the concerned parties.

5. TESTS

5.1 Tests shall be carried out by the appropriate methods referred to in 2.2.1 to 2.2.5, 2.3.1 and 2.3.2.

5.1.1 For the determination of alachlor content, start with 0.6 to 0.75 g of the sample.

NOTE — Several chlorinated impurities normally present in alachlor technical yield significant amount of chlorine under the conditions required to dechlorinate alachlor. The true assay by gas liquid chromatograph is typically 89 to 92 percent of chlorine assay by aniline reflux. It is therefore necessary for the analyst to be given a correction factor 'f' for a particular batch of emulsifiable concentrate in question. This correction factor 'f' may then be utilized to arrive at a true alachlor assay.

5.2 **Quality of Reagents** — Unless specified otherwise, pure chemicals and distilled water (*see* IS : 1070-1977*) shall be employed in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

*Specification for water for general laboratory use (*second revision*).

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Base Units

Quantity	Unit	Symbol
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

Quantity	Unit	Symbol
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

Quantity	Unit	Symbol	Definition
Force	newton	N	1 N = 1 kg. m/s ²
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m ²
Frequency	hertz	Hz	1 Hz = 1 c/s (s ⁻¹)
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m ²

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